

Claims

1. Interface unit (16) for employment at a dentist's or dental
treatment/workstation, which is provided for the purpose of passing on signals
5 containing image information,
wherein the interface unit (16) has the following features:
at least two inputs for receiving input signals containing image information,
at least two outputs for passing on output signals containing image
information to one or more displays (13) connectable with the interface unit (16)
10 and/or to further interface units (16) and
at least one internal transfer unit (70, 72) for selectively passing on of the
input signals containing image information to the outputs,
and wherein the interface unit (16) further has a processing unit (73) for
conversion of an analog video input signal into an output signal corresponding to a PC
15 standard.
2. Interface unit according to claim 1,
characterized in that,
the processing unit (73) has on the input side a first conversion block (73a) for
20 conversion of the analog video signal into a digital signal.
3. Interface unit according to claim 2,
characterized in that,
the digital signal produced by the first conversion block (73a) can be delivered
25 to a processing block (74) for digital processing of the video signal.

4. Interface unit according to claim 2 or 3,
characterized in that,
the digital signal produced by the first conversion block (73a), and if
5 applicable processed by the processing block (74), can be delivered selectively to the
first transfer unit (70) or to at least a further conversion unit (75) for the generation of
a signal corresponding to a PC graphic standard.

5. Interface unit according to claim 4,
10 characterized in that,
the second conversion unit (75) forms an output signal corresponding to the
VGA standard.

6. Interface unit according to claim 5,
15 characterized in that,
the digital signal produced by the first conversion block (73a), and if
applicable processed by the processing block (74), can be delivered to a third
conversion unit (76) for the generation of an output signal corresponding to the DVI
standard.

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7. Interface unit according to any preceding claim,
characterized in that,
this has at least two inputs and two outputs for video signals, and a first
transfer unit (70) via which the video input signals are selectively passed on to the
25 outputs.

8. Interface unit according to any of claims 1 to 7,
characterized in that,
at least one input signal is a signal corresponding to a PC graphic standard.

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9. Interface unit according to claim 8,
characterized in that,
this unit has at least two inputs and two outputs for signals corresponding to
the PC graphic standard and a second transfer unit (72) via which the signals are
10 selectively passed on to the outputs.

10. Interface unit according to claim 8 or 9,
characterized in that,
the signals corresponding to the PC graphic standard are VGA signals.

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11. Interface unit according to any of claims 1 to 10,
characterized in that,
this unit further has at least two inputs and outputs for audio signals, which in
each case are associated with the inputs and outputs for the signals containing image
20 information, and an audio transfer unit (71) via which the audio signals at the inputs
are passed on to the associated outputs in accordance with the passing on of the
signals containing the image information.

12. Dentist's or dental treatment/workstation, having

an interface unit (16) in accordance with any preceding claim, and at least one further device (10, 11, 12), in particular a dentist's work and/or examination device,

an input device (50) for the generation and wireless transmission of navigation and/or control information for activation and control of functions of the interface unit

5 (16) or of the devices (10, 11, 12), and

a functional unit (41), connected upstream of the devices (10, 11, 12, 16), which receives the navigation and/or control information transmitted from the input device (50) and passes it on to the devices (10, 11, 12, 16).

10 13. Dentist's or dental treatment/workstation according to claim 12, characterized in that, the interface unit (16) is integrated in the functional unit (41).

14. Dentist's or dental treatment/workstation according to claim 12 or 13,
15 characterized in that, the functional unit (41) passes on the navigation and/or control information transmitted from the input device (50) at least in part in a wireless manner to the devices (10, 11, 12, 16).

20 15. Dentist's or dental treatment/workstation according to claim 14, characterized in that, the functional unit (41) has a master module (42) for wireless communication with the devices (10, 11, 12, 16), whereby there is associated with the devices (10, 11, 12, 16) in each case a slave module (10a, 11a, 12a) which passes on the information
25 received from the master module (42) to the associated device (10, 11, 12, 16).

16. Dentist's or dental treatment/workstation according to claim 15,
characterized in that,
the slave modules (10a, 11a, 12a) are integrated in the respective devices (10,
5 11, 12, 16) or connected with these via an RS232 interface and/or a PC interface.

17. Dentist's or dental treatment/workstation according to any of claims 12
to 16,
characterized in that,
10 the functional unit (41) further stands in connection with a server (40),
wherein there is effected an exchange of data between the server (40) and the devices
(10, 11, 12 and 16) via the functional unit (41).

18. Dentist's or dental treatment/workstation according to claim 17,
15 characterized in that,
the functional unit (41) is connected with the server (40) via a USB interface.

19. Dentist's or dental treatment/workstation according to any of claims 12
to 18,
20 characterized in that,
the input device (50) has:
a first input element (52) for the generation of navigation information for the
control of a pointer on a user interface which is represented on a display (13, 14, 15)
of the dentist's treatment station,

at least a second input element (55) for the generation of control information with which functions of the devices (10, 11, 12, 16) are selectable and/or activatable independently of the navigation information generated by means of the first input element (52),

5 transfer means (51) for the wireless transmission of the navigation and control information generated with the aid of the first and second input elements (52, 55) to the devices (10, 11, 12, 16) or to a functional unit (41) connected upstream of the devices (10, 11, 12, 16).

10 20. Dentist's or dental treatment/workstation according to claim 19, characterized in that,

 the control information generated via the second input element (55) can be employed for the control of the at least one device (10, 11, 12, 16) independently of a unit (40) administering the user interface.

15 21. Dentist's or dental treatment/workstation according to claim 20, characterized in that,

 the first input element (52) has a navigation element (53) for the generation of two-dimensional navigation information and at least two selection keys (54a, 54c) for
20 the generation of supplementary selection information.

 22. Dentist's or dental treatment/workstation according to claim 21, characterized in that,

 the navigation element is a joystick (53).

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23. Dentist's or dental treatment/workstation according to claim 22,
characterized in that,
the joystick (53) can be pressed down for the generation of a supplementary
item of selection information.

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24. Dentist's or dental treatment/workstation according to claim 22 or 23,
characterized in that,
in a menu mode the functioning of the navigation element (53) is blocked, and
solely the selection information can be generated with the aid of the selection keys
10 (54a, 54c).

25. Dentist's or dental treatment/workstation according to any of claims 22
to 24,
characterized in that,
15 the second input element (55) is formed by means of a function key field
having a plurality of function keys (56 to 63).

26. Dentist's or dental treatment/workstation according to claim 25,
characterized in that,
20 a part of the function keys (56 to 58) is provided for control of the interface
unit (16).

27. Dentist's or dental treatment/workstation according to claim 26,
characterized in that,

a part of the function keys (59 to 61) is provided for selection of a video image source intended for representation on a display (13).

28. Dentist's or dental treatment/workstation according to claim 26 or 27,
5 characterized in that,

a part of the function keys (62, 63) is provided for the selection of an image signal corresponding to a PC graphic standard, in particular corresponding to the VGA standard, intended for representation on a display (13).